

# THE IBIS.

---

EIGHTH SERIES.

---

No. V. JANUARY 1902.

---

I.—*On a Collection of Birds from Shendi, Sudan.* By the  
Hon. N. CHARLES ROTHSCHILD and A. F. R. WOLLASTON.

(Plate I.)

AFTER a six days' journey from Cairo we arrived at Shendi on February 16th, 1901. Various misadventures had delayed us on our way into the Sudan, so, with a prospect of only five weeks before we should have to turn northwards again, we determined to make our camp at Shendi and to explore the neighbouring ground as thoroughly as possible, rather than attempt to hurry over a wide tract of country.

Shendi is situated on the east bank of the Nile, about midway between the Atbara River and Khartum; it is therefore well within the area of regular rainfall, which may be roughly said to begin at the Atbara. Our choice of a collecting-ground fell upon Shendi partly on account of its comparatively luxuriant vegetation, which is richer than that of any other part of the Nile Valley between Khartum and Assuan (Shendi has even been called the garden of the Sudan), partly because we expected to find there the northern limit of many tropical species, partly also on account of the fact that since the year 1850, when Mr. Galton collected near the Fifth Cataract, no ornithologist has paid more than a passing visit to this part of the country.

The fact that Shendi is the only place in the Sudan where it is possible to station cavalry is accounted for by the

existence there of a strip of grass, from which a poor forage is obtained. This strip of grass, about half a mile wide, runs along the east bank of the river for two or three miles southwards from Shendi; on the river side it is fringed by a few palm-trees, a few strips of cultivated land, and patches of thick tangles of acacia, broom, tamarisk, and Sodom-apple (*Calotropis procera*); while on the landward side it is bounded by a very dense scrub of acacia and mimosa, which becomes gradually thinner towards the desert.

As is well known, the desert of this region is not like that of Egypt or Nubia, a desolate waste of fine sand with not even a tree or a blade of grass for hundreds of miles, but it is fairly uniformly covered with scattered acacia-trees varying in height from ten to twenty feet, and here and there with small patches of a fine hair-like, almost white, grass. Occasionally one comes across a "khor," or wide, shallow, dried-up watercourse, which becomes an arm of the Nile during the rainy season; and at a distance of about eight to ten miles from the river is a range of low rocky hills, the highest rising perhaps four hundred feet above its level.

It will thus be seen that the country can be roughly divided up into four separate regions, each characterized by its own distinct fauna:—first, the river and its mud banks (with Terns, Pelicans, Geese, and Waders); second, the grass and scrub fringing the river (with Pigeons, Larks, *Cisticolæ*, Weavers, and Hornbills); third, the desert (with Wheatears, Shrikes, Crows, and Sand-Grouse); and fourth, the hills (with Rock-Thrushes, Eagle-Owls, and Vultures).

Our camp was pitched on the river-bank, and it was in the second region, that of the grass and scrub, that the majority of our birds were obtained.

In selecting a time of year suitable for a visit to the Sudan, one should endeavour to arrive there in November or December, when the weather is comparatively cool; but though it became exceedingly hot (110°–120° F. in the shade) towards the end of March, this drawback was more than counterbalanced by our good fortune in finding a

considerable number of nests, some of which were previously unknown. It is not unlikely that, could we have stayed for another month, we should have added several more to the list.

There seems to be a good deal of uncertainty as to the exact date of the general breeding-season in this part of the Sudan. Mr. H. F. Witherby, who was collecting last year a short way south of Khartum, but in a country very similar to that of Shendi, suggested that it was probably in June, after the rainy season. There cannot be the least doubt that the general breeding-season occurs in the months of February, March, and April. On the other hand, it is exceedingly likely that some species may breed again in the autumn: for instance, *Ædemosyne cantans*, of which we found a nest containing eggs on February 28th, is said by von Heuglin to breed in August and September; but this must be taken as the exception rather than as the rule.

So far as was possible, we only shot specimens of European migrants when some doubt was felt as to their identity; isolated specimens of migrants in such a case are of little or no value, but a careful record, extending over a period of a year or more, of those observed at stated points in the Nile Valley, which is one of the most important highways of migration in the world, would be of the greatest interest.

We take this opportunity of expressing our thanks to Captain Bulkeley Johnson and other officers of the Egyptian Cavalry stationed at Shendi, for much help and many kindnesses, which added greatly to the pleasures of our visit to the Sudan.

The natives we always found very friendly and on the whole fairly intelligent. One or two were particularly skilful in trapping birds and small mammals, and, whether it were a young hare, a bat, or a sand-grouse, they invariably brought it to us tied to the end of a stout piece of rope. They unfortunately have a bad habit of pulling out all the primaries from the wings of birds, which are consequently of little use as specimens.

The list of birds which follows will, we hope, prove of interest and of some value as an addition to our knowledge of their geographical distribution. It will be noticed how large a number of the species belong to Abyssinia also. We have purposely omitted to mention a large majority of the migratory birds which we saw. We have, moreover, made no attempt to describe the call-notes and songs, or to render them into words; such things can only be learnt by personal experience.

Our thanks are due to Mr. E. Hartert and the authorities of the Tring Museum for much valuable help in identifying our specimens.

N.B.—Species marked with an asterisk were fully identified, but specimens of them were not obtained. We purposely avoided shooting Vultures, Cranes, &c., partly because most collections are well supplied with them, and partly on account of the great difficulty of drying and packing the skins of large birds.

#### 1. NECTARINIA METALLICA Licht.

28 ♂, 61 ♂, 188 ♂, 299 ♂, 341 ♂, 401 ♂ juv., 419 ♂ juv., 203 ♀.

This was the only species of Sun-bird which we obtained. It was very plentiful in the scrub along the river-bank, especially frequenting those places where the Sodom-apple (*Calotropis procera*) was growing; a pair of these birds perched on the flowers of this plant, with constantly quivering tails and wings, made as pretty a picture as one could wish to see.

Von Heuglin says that this species begins to breed in June and July, when it lays a white egg with large red spots at the broad end. We found several nests; the first, on March 10th, contained three much-incubated eggs, and this seems to be the full clutch. All the eggs which we obtained were pure white, with a very few minute purplish spots, hardly visible without the aid of a lens, scattered over the broad end. The nest, which somewhat resembles that of the Long-tailed Tit, is usually built in an acacia-bush,

from four to ten feet from the ground, either resting in a fork or suspended from a small branch; it is made almost entirely of the down from the inside of the fruit of the Sodom-apple, bound together with spiders' webs, and lined with a few feathers.

2. *ÆGITHALUS PUNCTIFRONS* Sund.

348 ♂, 329 ♂, 349 ♀.

No. 348 is in very fresh plumage; the other two specimens are in abraded plumage, and shew the beginning of the moult. We only met with this species twice; on both occasions in a small flock of about half a dozen individuals, and on both occasions our attention was drawn to them by hearing their constantly repeated note, a high-pitched squeak very similar to that of the Gold-crest, which bird they closely resemble in their attitude and movements. They kept to the topmost flowering twigs of the larger acacias, and we had some difficulty in obtaining our specimens.

3. *MOTACILLA ALBA* Linn.

226 ♀, 348 ♂, 43 ♀, 258 ♀, 45 ♂, 278 ♀.

This was one of the commonest of the riverside birds. Individuals were nearly always seen in pairs, and we thought that they shewed signs of breeding, but no nest was found. Many of them were extraordinarily tame; an old male, with a particularly fine black shield, used to run in and out of the tents without showing the least sign of fear.

4. \**MOTACILLA VIDUA* Sund.

One was seen at Wad-Habushi, at the foot of the Sixth Cataract, on March 18th. The rocky nature of the river and river-banks there is very like that at Assuan, where this species is common.

5. \**MOTACILLA FLAVA* Linn.

Small parties of this Wagtail, generally numbering three or four individuals, were seen on migration during March. The first was seen on March 2nd.

6. *ANTHUS CAMPESTRIS* (Linn.).

374 ♂.

One specimen was shot out of a small flock on March 16th.

## 7. ANTHUS CERVINUS (Pall.).

67 ♀.

The Red-throated Pipit was often to be seen on the river-banks in company with Wagtails.

## 8. CALANDRELLA BRACHYDACTYLA (Leisl.).

312 ♂, 108 ♂, 314 ♂, 142 ♀, 109 ♀, 110 ♀, 311 (?).

The Short-toed Lark was undoubtedly the most abundant species that we saw at Shendi. It was always to be seen in parties of fifty or so in the scrub along the river-bank, whilst in the desert, a few miles from the river, we frequently came across immense flocks of several thousands of these birds. The females are very markedly smaller than the males.

## 9 GALERIDA CRISTATA (Linn.).

201 ♂, 109 ♂, 95 ♂, 236 ♂, 237 ♂, 253 ♂, 355 ♂, 3 ♀, 381 ♀, 150 ♀, 106 ♀, 279 ♀, 296 ♀, 361 ♀, 295 ♀, 385 ♀, 42 ♀, 392 ♀, 346 ♀, 276 ♀, 282 ♂ juv., 390 ♀ Wad-Habushi.

Our series of this Crested Lark belongs to a form very closely allied to the *Galerida cristata flava* of Brehm. Some specimens, in fact, agree exactly with the typical examples in the Brehm Collection at Tring; but the majority of our Shendi specimens are a shade darker, especially with regard to the spots on the back. The young bird (No. 282), moreover, is very different from the young of *G. c. flava*, which is of a buffy sand-colour, without any very dark patches on the chest and back; the Shendi specimen has deep brown centres to the feathers of those parts. It seems therefore that this form is a slightly darker race than *G. c. flava*, though some specimens seem to be indistinguishable from it.

The Crested Lark of Assuan, *Galerida cristata maculata* Brehm, is a very much darker form, and darker still is the Crested Lark of Lower Egypt and the Delta, *G. c. nigricans* Brehm. It is not unreasonable to suppose that, if Crested Larks were collected all the way down the Nile Valley from Khartum, where the typical *G. c. flava* is found, to the

Delta, a series would be obtained presenting every intermediate stage between the very pale and the very dark forms. It is not our intention to enter into a controversy on the vexed question of nomenclature, but it seems to be a somewhat arbitrary proceeding to give a subspecific title to any one of these intermediate forms rather than to any other.

We found these Crested Larks common along the river-banks, especially where the land was cultivated. The male bird has a pleasing little song, not unlike that of the Wood-Lark, which he often utters when perched on the top of a bush or small tree. Two nests, found on February 24th and February 27th respectively, contained two and three half-fledged young; we did not succeed in obtaining eggs.

10. *AMMOMANES DESERTI* (Licht.).

373 ♂, 248 ♂, 139 ♀, 283 ♀.

A few pairs of these birds frequented the rocky hills in the desert, about ten miles east of Shendi. They were very shy and difficult to approach, taking short flights from one rock to another, very much as Rock-Pipits do. A newly built nest of grass, lined with hair, was found on a ledge in a low cliff; it seemed to belong to a pair of these birds, but we had no opportunity of revisiting it.

This species was originally described by Lichtenstein from specimens obtained in Upper Egypt. All our specimens are alike, and they differ from examples obtained at Assuan in having the breast practically unspotted, and in being of a much redder colour. These differences are perfectly noticeable when the bird is seen on the wing. We are not prepared to maintain that these forms should be distinguished by subspecific or varietal names, but from a logical point of view they certainly ought to be so distinguished, if that honour is to be conferred (as it is) on many of the Crested Larks, &c.

11. *AMMOMANES CINCTURA ARENICOLOR* (Sund.).

378 pullus.

We obtained only one example of this species, on March 17th.

## 12. PYRRHULAUDA MELANOCEPHALA Licht.

*Pyrrhulauda melanocephala* Licht. Verz. Doubl. p. 25 (1823).

405 ♂, 167 ♂, 5 ♂, 93 ♂, 220 ♂, 181 ♀, 6 ♀, 49 ♀, 162 ♀, 406 ♀, 7 ♀ juv., 169 ♀ juv., 233 (?) juv.

*Pyrrhulauda melanocephala* is the representative of the true *P. leucotis* (Stanley, in Salt's Voy. Abyssinia, p. lx, 1814), an Abyssinian bird, of which we have recently examined a specimen obtained by Mr. A. L. Butler at Gedaref in May 1901. It is, moreover, synonymous with *P. otoleuca* (Temm.), 1824. (Cf. Hartert, Nov. Zool. vol. viii. p. 340, 1901; and Grant, Bull. B. O. C. xii. p. 15, 1901.)

This species is fairly common, frequenting the more open patches of the scrub near the river-bank; we never found it very far from the water. It was noticeable how often the birds went about in parties of three, nearly always consisting of two males and one female. They are very Lark-like in their habits, closely resembling, in note and flight, the Short-toed Lark.

On March 19th we found a nest of this species, containing one egg; it was a very shallow depression in the open sandy ground, about the size and depth of a watch-glass, lined with a few pieces of dry grass. Visiting the nest three days later, we expected to find in it three or perhaps four eggs, but found instead that the single egg had been hatched. Mr. H. F. Witherby mentions (*Ibis*, 1901, p. 245) finding a nest of *P. leucotis (melanocephala)* containing a single egg, so it may be presumed that one is the full complement of eggs laid by this species.

## 13. PYRRHULAUDA FRONTALIS Bp.

*Pyrrhulauda frontalis* Bp. Consp. Av. i. p. 512.

136 ♂, 140 ♂, 145 ♂, 175 ♂, 320 ♂, 135 ♀, 168 ♀, 318 ♀.

This is the Sudanese representative of *P. melanauchen* (Cabanis), a bird which appears to be confined to the Abyssinian coast of the Red Sea. In the 'Catalogue of Birds,' *P. melanauchen* and *P. frontalis* are treated as being synonymous; but von Heuglin (*Orn. N.O.-Afr.* i. p. 671)



clearly distinguished between the two forms. *P. frontalis* differs from *P. melanauchen* in having no black nuchal band, which in the latter is more or less fully connected with the black of the under surface. The white patch on the forehead extends backwards as far as the eyes, being thus twice the size of the white spot on the forehead of *P. melanauchen*. The upper surface is much more sandy buff, not nearly so grey and brown as in the Abyssinian form.

These birds were less common at Shendi than the preceding species. In their habits they are very similar, but whereas *P. melanocephala* is a frequenter of the river-bank, this species is essentially a bird of the desert, very seldom being seen near the water. In colour they harmonize perfectly with their surroundings and are very difficult to see, the coal-black breast and under parts of the male looking exactly like the shadow of a stone or of some slight inequality of the ground.

14. *EMBERIZA CÆSIA* Cretzsch.

77 ♂, 57 ♂, 74 ♂, 186 ♂, 89 ♂, ? 232 ♀, 281 ♀.

Not very common at Shendi, and, owing to its unobtrusive habits, seldom seen. Like so many other species that we met with, this bird hides itself in the thickest bushes during the day-time, and only becomes active during the last hour before sunset. According to Sharpe (Cat. B. xii. p. 536), this Bunting only winters in N.E. Africa. Although we did not find a nest, its behaviour was that of a resident species; it was nearly always to be seen in pairs, and there seemed to be no diminution in the numbers towards the end of our stay.

15. *PASSER RUFIDORSALIS*. (Plate I. fig. 2.)

*Passer rufidorsalis* Brehm; Witherby, Ibis, 1891, p. 146.

18 ♂, 328 ♂, 16 ♂, 63 ♂, 17 ♂, 337 ♂, 189 ♂, 147 ♂, 144 ♂, 207 ♂ juv., 69 ♂ pullus, 321 ♂ juv., 362 ♂ juv., 140 ♀, 418 ♀, 191 ♀, 190 ♀, 261 ♀, 367 ♀, 422 ♀, 436 ♀.

This is a southern form of *P. domesticus*. It might be described as a small and very bright House-Sparrow, with

a very bright chestnut mantle. The female can only be distinguished from the same sex of the House-Sparrow by its smaller size. It was first described by Brehm (Naumannia, 1856, p. 377) from specimens obtained at Khartum; Emin Pasha subsequently found it at Lado, a long way further south. At Shendi it is exceedingly common, especially frequenting the patches of cultivation round the houses on the river-bank. In its habits it is very much like our House-Sparrow, and its chirping note is quite indistinguishable.

We found several nests of this bird in March: they were loose structures of dry grass and feathers, and were placed in crevices of the hard mud bank on the west side of the Nile. The eggs resemble those of other Sparrows, but are devoid of all gloss; they are of a whitish-buff ground-colour, speckled all over with rusty brown and greyish brown, and having some underlying mauve spots; the spots and patches form a vague zone about the thick end. They are considerably smaller than those of *P. domesticus*. The greatest number of eggs found in one nest was three.

16. *PASSER LUTEUS* (Licht.).

90 ♂, 121 ♂, 154 ♂, 155 ♂, 161 ♂, 84 ♂, 88 ♂, 163 ♀, 160 ♀, 162 ♀, 22 (?) juv., 354 (?).

This beautiful yellow Sparrow was exceedingly abundant at Shendi, increasing in numbers towards the end of our stay. Flocks of fifty and upwards might be seen almost at any time flying northwards along the river-bank; they were never seen to proceed in the other direction. They are very partial to water, and might sometimes be seen in enormous flocks bathing in the shallow pools of the river.

17. *PETRONIA PYRGITA* (Heuglin).

170 ♂, 171 ♀.

Our two specimens are rather pale above, and are slightly larger than typical specimens from Abyssinia in the Tring Museum.

This was a rare bird at Shendi; besides the specimens obtained we saw no others. They were found at the top of a tall acacia-tree on the west bank of the Nile, and when the

first was shot the second flew to the ground and pecked its dead mate most savagely.

18. PYROMELANA FRANCISCANA (Isert).

231 (?), 228 ♂, 230 ♂, 271 ♀, 369 ♀.

All our specimens are in an intermediate state of plumage; we saw no males in the full dress of red and black, which, according to von Heuglin, is assumed in August and September.

This bird frequents the fields of millet or "dhurra," on the seeds of which it feeds; it is not common at Shendi, but a good many individuals were seen a few miles south, while at Wad-Habushi, about fifty miles south, it was exceedingly abundant.

19. HYPOCHERA ULTRAMARINA (Gm.).

72 ♂, 65 ♂, 68 ♂, 180 ♂, 359 ♂, 400 ♂, 251 ♂.

This little bright blue bird was fairly common along the river-banks, more especially in the cultivated parts. It was generally seen in company with *Lagonosticta brunneiceps*.

20. VIDUA PRINCIPALIS (Linn.).

193 ♀.

Our solitary specimen of this bird is a young female. We did not observe any adult birds in nuptial plumage.

21. ÆDEMOSYNE CANTANS (Gm.).

54 ♂, 319 ♂, 358 ♂, 416 ♂, 417 ♂, 31 ♀, 46 ♀, 50 ♀, 415 ♀, 280 (?).

Most of our specimens are in a moulting condition.

According to Lorenz and Hellmayr (Journ. f. Orn. 1901, p. 232), North-east African and Arabian specimens differ in several points from typical West-African specimens, and have therefore been named *Ædemosyne orientalis*.

These birds were tolerably common at Shendi and were remarkably tame. They were very sluggish in their habits, and might often be seen in small parties sitting closely huddled together on a branch for hours at a time.

Towards the end of February a pair of these birds built a nest in a low bush in the midst of our camp; it was composed almost entirely of scraps of paper and of cotton-

wool, and was shaped somewhat like a very untidy nest of a Greenfinch. Unfortunately, when two eggs had been laid, the nest was ruthlessly destroyed by a pair of *Passer rufidorsalis*, who paid the penalty of their crime with their lives.

22. *LAGONOSTICTA BRUNNEICEPS* Sharpe.

66 ♂, 146 ♂, 259 ♂, 250 ♀, 260 ♀, 263 ♀, 403 ♀.

The adult males are exceedingly bright, very much more so than specimens from Tropical Africa in the Tring Museum.

These beautiful little birds were never observed far from the huts on the river-bank, where they were often seen picking up crumbs of dhurra-meal almost out of the hands of the natives.

23. *HYPHANTORNIS VITELLINUS* Gray.

30 ♂, 143 ♂, 268 ♂, 132 ♀, 269 ♀, 270 ♀, 301 ♀.

The adult male is a very conspicuous bird, and his long-drawn wheezy call-note might be heard about every fifty yards in the thick scrub. Several of their hanging bottle-shaped nests were found, sometimes three or four depending from the same branch; one pair of birds was observed building at intervals for three or four weeks, but no eggs were laid during our stay at Shendi.

24. *SPREO PULCHER* (P. L. S. Müll.).

115 ♀, 324 ♀, 440 pullus.

The last specimen has the upper side slaty black with a very faint greenish gloss; the abdomen is dull rufous in colour, the rufous extending upwards towards the throat.

These Starling-like birds were occasionally seen in small parties of four or five, always several miles out in the desert. They were very wary and difficult to approach.

According to von Heuglin, this species breeds in September and October; but our young bird, caught on March 23rd, cannot have been out of the nest for more than a few days.

We were very much puzzled by the large number of empty nests in the trees in the desert; in some places every little tree contained one or more nests compactly built of twigs

with a scanty lining of grass. They were just such as this bird might build; but while we saw only four or five birds in a day, we were certain to see at least five hundred of these nests. In no instance did they contain eggs.

25. *CORVUS SCAPULATUS* Daud.

255 ♀, 264 ♂, 265 ♂, 99 ♀.

Shendi must be very nearly the northernmost limit reached by this species, as at the Pyramids of Meroe, about forty miles further north, though the country is admirably suited to it, not an individual was to be seen. It is a conspicuous and noisy bird, in habits very like the Raven, but rather more gregarious. A nest containing three fresh eggs was found in an acacia in the desert on March 23rd. The eggs resemble those of *Corvus corax*, but are much smaller, measuring only 44.5 by 30.5, 44 by 30.5, and 41.1 by 32.5.

26. \**CORVUS UMBRINUS* Sund.

This Crow was rarer than the preceding species, and very much more shy in its habits.

A nest containing one hard-set egg was found on March 8th. The egg resembles that of *C. scapulatus*, but it is not so green and the markings are paler. It measures 44 by 31.5 mm.

27. \**CORVUS AFFINIS* Rüpp.

A few pairs of these Crows were occasionally seen on the rocky hills in the desert; but they were always very careful to keep out of range of a gun.

28. *LANIUS NUBICUS* Licht.

225 ♂, 275 ♀, 377 (?).

The Nubian Shrike was common at Shendi. It was generally to be seen in pairs, and was exceedingly bold in resenting the approach of any intruders. On two occasions we observed the old birds feeding the young, which were scarcely able to fly, but no nests were found.

29. *LANIUS ISABELLINUS* Ehrenb.

224 (?), 346 ♂, 402 ♂.

Only three specimens of this Shrike were seen; it is a shy

and retiring bird, and but for its rufous-coloured tail it might easily escape notice altogether.

30. *LANIUS ASSIMILIS* C. L. Brehm.

366 ♀.

The single specimen of this Shrike was obtained in the desert on March 15th; it agrees in every detail with the type of *L. assimilis* in the Tring Museum.

31. *LANIUS LEUCONOTUS* C. L. Brehm.

113 ♂, 219 ♂.

*L. leuconotus* is probably the same as *L. dealbatus* (de Filippi). Our two specimens agree in every way with the type of *L. leuconotus* of Brehm.

This Shrike is not common, but it is one of the most conspicuous birds of the desert. It was usually seen singly, and shewed no signs of breeding.

32. *TELEPHONUS REMIGIALIS* Hartl. & Finsch.

223 ♂, 247 ♂, 335 ♂, 364 ♂, 398 ♂, 117 ♀, 397 ♀.

The females are considerably smaller than the males, the wing being from 4 to 6 mm. shorter.

This species haunts the very densest scrub and is one of the most shy and retiring birds that we met with at Shendi.

Like so many of the species of this region, it is more often seen during the last hour of daylight than at any other time, and its loud piping whistle may sometimes be heard a long time after sunset.

33. *ARGYA ACACIÆ* (Licht.).

274 ♂, 389 ♂, 62 ♀, 126 ♀, 137 ♀, 273 ♀, 285 ♀.

In the females the wing is distinctly shorter than in the males.

The native name of this species, which means "Seven Sisters," is very appropriate, inasmuch as it is nearly always seen in family-parties of six or seven. As a means of escape, it quite as often trusts to its feet as to its wings, hopping along the ground in great bounds of two or three yards at a time, with tail uplifted, and chattering angrily the

while. We never saw one make a flight of any length, or rise more than a few feet from the ground.

A nest containing four eggs was found on March 18th in a dense acacia-bush some miles out in the desert. It was a loosely built cup-shaped structure of small twigs and dry grass. The eggs resemble those of other species of the genus *Argya*, being of a beautiful glossy greenish blue and measuring 24.3 by 17.5, 23.4 by 17.7, 23.5 by 17.6, and 24 by 17.7 mm.

34. *PYCNONOTUS ARSINOE* (Hempr. & Ehrenb.).

414 (sex ?).

These Bulbuls were fairly common at Shendi and shewed a strong partiality for the neighbourhood of man. In their song and general behaviour they are not unlike the Black-bird, sitting day after day in the same tree, sometimes singing and sometimes driving away a swarm of too venturesome Sparrows (*Passer rufidorsalis*).

A nest containing two young birds was found on March 7th. It was a light cup-shaped structure of grass and was slung in a climbing gourd-plant about eight feet above the ground.

35. *SPILOPTILA CLAMANS* (Temm.).

118 ♂, 206 ♂, 305 ♂, 119 ♀, 138 ♀, 284 ♀, 304 ♀, 306 (?).

We first saw this beautiful little bird on February 26th; towards the end of March the numbers seemed to have increased considerably. They were sometimes to be seen in pairs, but more often in parties of six or eight, flying about in the desert from one bush to another, always swinging their long tails from side to side, and constantly uttering their loud call-note. On March 25th we observed a pair building a nest in a low bush in the desert; it was about eighteen inches above the ground and was a domed egg-shaped structure of fine grass, lined with a few feathers; there was a small round opening on either side. Unluckily, however, no eggs had been laid when we left Shendi two days later.

36. *CISTICOLA CISTICOLA* (Temm.).

22 ♂, 29 ♂, 176 ♂, 177 ♂, 185 ♂, 184 ♀, 302 ♀, 429 (?).

These little birds were exceedingly common in the grassy plain above mentioned and were never seen in the desert. They have a habit of rising almost vertically about thirty or forty feet into the air, singing their quaint little chattering song, and then dropping suddenly, as if dead, into the long grass.

A nest containing three young birds was found on March 4th.

37. *CISTICOLA ARIDULA*. (Plate I. fig. 1.)

*Cisticola aridula* Witherby, Ibis, 1901, p. 256.

370 (sex?).

This bird agrees perfectly with the type of *C. aridula*, which Mr. Witherby has kindly sent us for comparison. The subterminal black bars on the rectrices are not altogether absent in the type specimen; but they are not so sharply defined as in *C. cisticola*, owing to the fact that the basal portion is much darker in *C. aridula* than in *C. cisticola*. In our Shendi specimen the black subterminal bars are rather more distinct than in Mr. Witherby's example.

The wing measures 47, the tail about 38 mm.

In addition to the other characters described by Mr. Witherby, this bird differs from *C. cisticola* in the entirely white outer web of the outermost tail-feather; in this feature it agrees with *C. hindii*.

Our solitary specimen of this species was obtained on March 16th on the west bank of the Nile. It was found among the rank "halfa-grass" so much frequented by *C. cisticola*, and, when flying, was seen to be noticeably paler than that species; but in other respects we are unable to say anything about its habits.

38. *BURNESIA GRACILIS* (Cretzsch.).

179 ♂, 32 ♂, 112 ♂, 204 ♂, 48 ♀, 205 ♀.

This little bird was common in the scrub on both sides of the river. It was always to be seen in pairs, and began to breed about the end of February. Nests were found on





1.



2.



3.



4.

Mintern.Bros.imp.

1. CISTICOLA ARIDULA. 2. EGG OF PASSER RUFIDORSALIS. 3 4. EGGS OF CAPRIMULGUS EXIMIUS.

February 24th, March 2nd, and March 6th; the nest resembles that of *Spiloptila clamans*, but is slightly smaller; all those which we found were built in shrubs (*Genista*) about three feet from the ground. For some unexplained reason the birds always deserted them before any eggs were laid.

39. *CERCOTRICHAS PODOBE* (P. L. S. Müll.).

19 ♂, 242 ♂, 331 ♂, 252 ♀, 326 ♀, 421 ♀.

The wing of the female is about 5 mm. shorter than that of the male.

This species was somewhat uncommon at Shendi, though, on account of its retiring habits, it was no doubt often overlooked. It bears a remarkable resemblance to our Blackbird both in its varied and flute-like song and in its manner of hopping about on the ground. It has a pretty habit of waving, and at the same time spreading out, its tail when perched upon a tree.

40. *HYPOLAIS PALLIDA* (Hempr. & Ehrenb.).

94 ♀, 420 ♀.

This species was exceedingly common, especially frequenting the open scrub towards the desert. It was very often to be seen in pairs, and had all the appearance of being resident, but no nests were found.

41. *SYLVIA ORPHEA* Temm.

351 ♂, 330 ♀.

The Orphean Warbler was frequently to be met with in the scrub along the river-bank.

42. *SYLVIA RUEPELLI* Temm.

277 ♂, 344 ♀.

Our two specimens of Rüppell's Warbler were all that we saw. They were very shy and were met with in the most impenetrable portions of the scrub.

43. *SYLVIA MOMUS* (Hempr. & Ehrenb.).

70 ♂, 187 ♂, 309 ♂.

These specimens have been compared with the type of *S. momus* in the Berlin Museum. It is possible that even-

tually *S. momus* and *S. mystacea* may turn out to be the same species.

44. *AGROBATES GALACTOTES MINOR* (Cab.).

307 ♂, 445 ♀, 333 (?).

North-East African specimens of the Rufous Warbler are smaller and somewhat darker on the back than typical examples from Spain.

The Rufous Warbler was first noticed at Shendi on March 10th, after which date it became a good deal more numerous.

45. *MONTICOLA CYANUS* (L.).

248 ♀.

Rock-Thrushes were occasionally seen on the rocky hills out in the desert.

46. *SAXICOLA ŒNANTHÆ* (L.).

153 ♀, 356 ♂, 413 ♂.

The Common Wheatear was frequently seen on the river-bank.

47. *SAXICOLA ISABELLINA* Cretzschm.

148 (?), 209 (?), 4 (?).

The Isabelline Wheatear was not uncommon in the desert. It was usually to be seen in pairs.

48. *SAXICOLA MELANOLEUCA* (Güld.).

249 ♂, 313 ♂, 266 ♀, 298 ♀.

The Black-throated Wheatear was a fairly common frequenter of the river-bank. It was seldom seen during the day, but towards evening became very active; on several occasions we observed one of these birds, at least an hour after sunset, when it was quite dark, dart out from the bank and hawk for flies over the water like a Flycatcher.

49. *SAXICOLA DESERTI* Temm.

24 ♂, 83 ♂, 100 ♂, 44 (sex ?).

The Desert-Wheatear was as often to be seen on the river-bank as in the desert. It was generally met with in pairs.

50. *COTILE MINOR* Cab.

111 ♂, 288 ♂, 292 ♂, 336 ♂, 178 (sex?).

There is a considerable difference in size in these specimens.

These little Martins were fairly numerous at Shendi, frequenting the river-banks either singly or in small parties just as our Sand-Martins do. On March 25th a colony of from fifteen to twenty pairs was found nesting in a sandpit on the brink of the river. The holes were horizontal and were about two feet long. One nest contained five eggs slightly incubated: the eggs are pure white; one of them measures  $16 \times 12.5$  mm.

51. \**COTILE RIPARIA* Linn.

Sand-Martins were often seen on the river-bank, sometimes in company with the last species.

52. *HIRUNDO RUSTICA* Linn.

450 (sex?)

Chimney-Swallows were occasionally seen at Shendi. Our specimen was shot on March 26th, when it must have been on migration.

53. *HIRUNDO SMITHI* Leach.

267 ♂, 317 ♂, 316 ♀.

This beautiful Swallow was very rare at Shendi, two or three pairs only frequenting a spot where the mud bank, harder than usual, projected as a little cliff into the river. A few pairs were also seen in a similar situation at Wad-Habushi, fifty miles further south. A shrill wailing cry is uttered by both males and females.

On March 11th a nest containing three eggs was found in a crevice between two strata of the low cliff above mentioned. The eggs are pure white.

54. *HIRUNDO ÆTHIOPICA* Blanf.

448 (sex?).

Our solitary specimen of this Swallow was the only one seen.

55. *TACHORNIS PARVA* (Licht.).

38 ♂, 39 ♂, 239 ♂, 241 ♂, 238 ♀, 308 ♀, 350 ♀, 240 (sex?), 37 ♀.

This little Swift was fairly common at Shendi. So far as we observed, it is quite a silent bird; in other respects its habits are very similar to those of the Common Swift. Fifteen or twenty pairs were always to be seen flying about one of the few big Dom-palms of the district. They were constantly going into the crevices at the bases of the leaves, and must undoubtedly have had nests there, but the nature of the tree forbade any attempts at obtaining them.

56. *CAPRIMULGUS EXIMIUS*. (Plate I. figs. 3, 4.)

*Caprimulgus eximius* Temm.; Witherby, Ibis, 1901, p. 259.

114 ♂, 272 ♂, 323 ♂, 446 ♂, 447 ♂, 426 ♂ jr., 322 ♀, 371 ♀, 441 ♀, 443 ♀, 444 ♀, 449 ♂, 451 ♀, 291 ♂, 412 ♀, 451A pull.

There is not much variation among the adult birds. Some are of a lighter yellow, while others are more rufous, but the differences are not great. The width of the white tips to the lateral rectrices in the males varies from 30 to 40 mm.; the length of the wing varies from about 174 to 185 mm. On the interscapulum there is sometimes a small but well-marked patch without any white marks. In the females, which are of the same size as the males, the white patches on the primaries are bordered with buff, which colour gradually merges into the white; and the rectrices, instead of being tipped with white, are tipped with buff. The width of the buff tip to the outermost rectrices varies from 20 to 25 mm.

The young male (No. 426) has already moulted the rectrices and primaries, but the crissum, abdomen, and rump are still covered with the first fluffy feathers of the young.

The pullus (March 27th) is covered with rufous-isabelline down; that on the abdomen is white. The tubular nostrils are remarkably prominent.

Our specimens of this most beautiful Nightjar were all obtained within a few miles of Shendi. The ground which they mostly seemed to prefer was of quite a distinctive nature; it was generally sloping and was intermediate in character between the grassy scrub and the open desert; the soil was not fine and earthy but coarse and gravelly, often with a

good many scattered stones and tufts of grass. We never saw one of the birds amongst the trees or in thick scrub. During the day, like other Nightjars, they lie very close and are seldom noticed ; they harmonize most perfectly with their surroundings and are exceedingly difficult to see. On one occasion we only detected one by its shuffling along an inch or so to avoid being trodden on by a camel. At night they are on the wing very soon after sunset, when they come down to the river. They fly up and down the banks or out over the water, often touching the surface either to drink or to catch an insect ; after half an hour or so they seem to retire towards the desert. We never saw one of these Nightjars perched on a tree ; they sit on the ground and often "churr" for several minutes at a time. The "churr" is distinctly of a lower pitch than that of *Scotornis climacurus*.

We saw this species also at Wad-Habushi, halfway between Shendi and Khartum, in a locality very similar to that near Shendi. It may therefore perhaps be presumed that *C. eximius* will eventually be found to be resident in this region wherever ground suitable to its habits exists ; that is to say, from the Atbara right up the Nile and the White Nile almost as far as Fashoda. It is a bird which might very easily be overlooked : had we stopped a few days only at Shendi, we should certainly not have found it ; in fact, it was not until we had been there very nearly a month that we became acquainted with its habits.

We found three nests, or rather breeding-spots, on March 16th, 20th, and 27th ; the first two contained two eggs each, very much incubated, the third contained one young bird just hatched and an addled egg. There was no pretence at a nest, not even a depression, the eggs being laid on the bare ground near a tuft of grass, under which the bird often hides. They are of the usual character of those of Nightjars and vary considerably in markings and shape ; some are darker than others, some are oval, and some a little pointed at one end. The ground-colour is a dirty greyish buff, thickly spotted all over with liver-brown or greyish-brown patches and under-

lying mauve spots. They measure 28·7 by 21·5, 29·3 by 21·1, and 29·5 by 20·7 mm.

The natives call this bird "Abu Tabag" (Father of bowls), presumably on account of the bowl-like appearance of the open mouth.

57. *CAPRIMULGUS ÆGYPTIUS* Licht.

293 ♀, 411 ♂.

We obtained only two specimens of the Egyptian Nightjar; the first was found in long grass among trees during the daytime, the second was flying in the evening in company with *C. eximius*.

58. *SCOTORNIS CLIMACURUS* (Vieill.).

199 ♂, 410 ♂, 421 ♂, 200 ♀, 375 ♀.

There is much variation in the general colour of these birds, No. 421 being much more rufous, and Nos. 375 and 410 very much blacker than the others.

This beautiful long-tailed Goatsucker was fairly common at Shendi. Unlike *Caprimulgus eximius* it is essentially a bird of the scrub and thick trees, hiding by day in the most shady and impenetrable thickets. At night it seems to spend almost as much time in sitting "churring" at the top of some tree as in flying; it was often seen flitting about the river in company with *C. eximius*. The two long central tail-feathers of the male are held apart in flight at an angle of about twenty-five or thirty degrees. Though pairs were often seen, they did not seem to be breeding; neither the testes nor the ovaries of any of our specimens being enlarged.

59. *CORACIAS ABYSSINICUS* Bodd.

376 ♂, 357 ♀, 51 ♀.

The Abyssinian Roller was occasionally seen, but it was usually very wary and difficult to approach. The native name, which means "Child of the clouds," is well chosen; you hear one of these birds high up above your head almost out of sight, and then down it suddenly comes in a fluttering corkscrew flight, with wings and tail spread out, to perch and chatter at you from the top of a tree, just out of gunshot. A pair were twice seen to go into a hole in the

mud wall of a deserted house; we hoped that they were going to nest there, but they had not done so before we left Shendi.

60. *MEROPS PUSILLUS* P. L. S. Müller.

*M. p. ocularis* Reichen. Orn. Monatsb. 1900, p. 86.

25 ♂.

The fact that we saw and obtained only one specimen of this little Bee-eater at Shendi is rather remarkable, considering how abundant it is at Khartum, where it may be said to share with *Passer luteus* the honour of being the commonest bird.

61. *MEROPS VIRIDISSIMUS* Swains.

71 ♂, 96 ♂, 127 ♂, 126 ♂, 243 ♂, 60 ♀.

The absence of the blue throat and other differences necessitate the separation of the African and Indian forms of this bird.

This Bee-eater was exceedingly common at Shendi, sometimes being seen in little flocks of five or six, more often in pairs. They were occasionally observed to go into holes in banks, but we did not succeed in finding a nest.

62. *UPUPA EPOPS* Linn.

227 ♂, 287 ♀, 388 ♀.

Erlanger has separated the Mediterranean form of *Upupa epops* as *Upupa epops pallida* (Journ. f. Orn. 1899, p. 15), but our Sudan specimens and others from North Africa in the Tring Museum do not seem to differ in any way from typical North-European specimens.

There was a sudden immigration of Hoopoes on March 8th, after which they might be seen for a few days in almost every tree.

63. *LOPHOCEROS NASUTUS* (Linn.).

78 ♂, 245 ♂, 173 ♀, 174 ♀, 246 ♀.

These remarkably ugly Hornbills were fairly numerous at Shendi. They spend most of the day in the dhurra-fields along the river-banks, where they do a good deal of damage; at night they retire to the thick belt of trees which fringes the desert. Not the least remarkable feature of this bird is



its extraordinarily tough skin, which is capable of turning shot of almost any size at more than thirty yards distance.

64. *CERYLE RUDIS* (Linn.).

11 ♂.

This was the only Kingfisher we saw. It was very common and remarkably tame, sometimes hanging motionless in the air within a few yards of us, and then dropping with a sudden splash into the river.

65. *COCCYSTES GLANDARIUS* (Linn.).

151 ♀.

Our solitary specimen of the Great Spotted Cuckoo was the only one seen.

66. *CENTROPUS SUPERCILIOSUS* Hempr. & Ehrenb.

363 ♂.

We only met with this bird once.

67. *TRACHYPHONUS MARGARITATUS* (Rüpp.).

203 ♂, 432 ♂.

The bills of our specimens are a little longer than those of Abyssinian examples in the Tring Museum.

This gaudy Barbet was very rare at Shendi; we only met with it on two occasions. It has a loud clear note, which might easily be mistaken for a human whistle.

The native name of this bird means "wood-pecker."

68. *MESOPICUS GOERTAN* (P. L. S. Müll.).

80 ♂.

Our single specimen of this species was the only Woodpecker that we saw. It was in the midst of a very dense thicket, and our attention was drawn to it by hearing its very characteristic cry.

69. *TURTUR TURTUR* (Linn.).

34 ♂.

A single Turtle-Dove was shot at Shendi on February 19th. It appears to be slightly paler than the majority of European specimens, but it can be matched by British examples. It was probably a European bird in its winter-quarters.

70. *TURTUR ROSEOGRISEUS* (Sund.).

86 ♂, 339 ♂, 26 ♀, 35 ♀, 36 ♀, 164 ♀, 165 ♀, 340 ♀, 353 pullus.

This Dove was exceedingly common. Upwards of fifty might sometimes be seen sitting in one of the bigger trees near the river; it was also well distributed all over the desert, but was less numerous there.

Several nests were found in acacia-bushes at heights varying from three to six feet from the ground. They were light structures of twigs, very similar to those of the European Turtle-Dove. The number of eggs was two in every case; they are white with very little gloss: average measurements 29·2 by 23 mm.

71. *TURTUR DECIPIENS* Finsch & Hartl.

123 ♂, 192 ♂, 256 ♂, 372 ♂, 124 ♀, 158 ♀.

This is the same form which has been called *Turtur ambiguus* by Mr. Witherby (Ibis, 1901, p. 266). Mr. Witherby found that his specimens from the White Nile, and those in the Tring Museum from N.E. Africa, differed from the type of *T. ambiguus* in having slightly longer wings and considerably wider tips to the rectrices. But after an examination of the specimens in the British Museum, he decided not to separate the form found in North-East Africa from the West-African *T. ambiguus*.

We are inclined to think that it would be more correct to separate the two forms, but in any case our birds must be called *T. decipiens*, and not *T. ambiguus*; the former name was published some years before the latter, and was originally given to the North-East African form.

This Dove was very much less numerous than the preceding species, from which it was readily distinguished by its larger size. It becomes increasingly common as one goes southwards from Shendi, which place seems to be about its most northerly limit.

A nest containing two eggs was found in an acacia-bush on March 16th. The nest was like that of the preceding species. The eggs are of a pure white, without gloss, and measure 32·1 by 22·5 and 29·6 by 23 mm.

## 72. TURTUR SENEGALENSIS (Linn.).

27 ♂, 105 ♂, 129 ♂, 128 ♀ juv.

This Turtle-Dove was very common at Shendi, but less so than *T. roseogriseus*. We found several nests; the number of eggs was always two. They are glossy white; average measurements 25·1 by 19·5 and 24 by 19 mm.

## 73. CENA CAPENSIS (Linn.).

52 ♂, 104 ♂, 105 ♂, 149 ♂, 159 ♂, 235 ♂, 382 ♂, 383 ♂, 82 ♂ juv., 134 ♀, 289 ♀, 384 ♀.

We first saw this little long-tailed Dove at Berber, which may perhaps be considered its northernmost limit. At Shendi it was very plentiful and well distributed all over the country, a nest being even found in the desert ten or more miles from the river.

We found the nest of this species several times, the first being on February 20th. It is the slightest possible structure of fine twigs and coarse grass, or sometimes of grass only, and is placed in a low bush, generally not more than three feet from the ground. The number of eggs was sometimes one, more often two. They are not white, like those of most *Columbidæ*, but are of a rich cream-colour, and have a hard and thick shell. Measurements: 20·1 by 16, 21·7 by 15·9, 20 by 15·5, and 20·5 by 16 mm.

## 74. STRIX FLAMMEA MACULATA Brehm.

423 ♂, 427 ♂, 434 ♂, 424 ♀, 428 ♀, 442 ♀, 438 (sex?), 439 (sex?).

Our specimens of the Barn-Owl agree very well with the types of Brehm's *S. f. maculata* now in the Tring Museum. They all have a dark strongly spotted upper surface; and the under surface is also heavily marked with blackish spots, some of which are shaped very much like arrow-heads. In these features they differ from the Barn-Owl of Lower Egypt and the neighbourhood of Cairo, which E. Hartert (Nov. Zool. vii. p. 533) has provisionally united with the West-European and Mediterranean form, the *S. f. kirchhoffi* of Brehm. The legs of our specimens also appear to be somewhat longer and more bare than in typical European specimens.

The differences between the Tropical Barn-Owl (*S. f. maculata*), the true *S. flammea*, and the West-European *S. f. kirchhoffi* have been fully discussed by Reichenow ('Die Vögel Afrikas,' i. p. 676, 1901).

Barn-Owls were fairly common at Shendi; we often heard, but seldom saw, them. They frequented the ruins of the old town of Shendi. Nos. 423, 424, 427, and 428 were obtained at Kabushea, about forty miles to the north, where we also obtained young birds in down on March 23rd.

75. *BUBO ASCALAPHUS DESERTORUM* Erlanger.

294 ♂, 409 ♂, 344 pullus.

These specimens from Shendi agree absolutely with specimens of *B. a. desertorum* (Erl. Orn. Monatsb. v. p. 192, 1897) in the Tring Museum from Gabes, Tunis.

This very handsome Eagle-Owl was found on two isolated rocky hills, Gebel Margel and Gebel el Lahemer, about ten miles east of Shendi. There appeared to be only one pair of Owls on each. They were as often found sitting on the sunny as on the shady side of the hill during the day-time, and were always very much on the alert, flying away without hesitation if approached too closely.

On March 13th we found a nest containing two young birds in down on the south side of Gebel Margel. It was merely a depression in the midst of large blocks of stone, and was fully exposed to the heat of the sun; at mid-day the rocks became so hot that it was impossible to touch them with the hand for any length of time. Round the nest were large numbers of pellets, containing the hair and bones of hares, mice, and jerboas.

76. *PISORHINA LEUCOTIS* (Temm.).

325 ♂, 76 ♂ juv., 342 juv. (sex?), 343 juv. (sex?), 430 ♀ juv., 431 ♀ juv., 432 ♂ juv.

This little Owl was not uncommon at Shendi. Some of our specimens were found in trees, and some in the ruins of the town of Shendi.

On March 22nd a nest containing three almost fully-fledged young birds was found in a deserted well.

77. *MILVUS ÆGYPTIUS* (Gm.).

194 ♂, 195 ♂, 290 ♂, 315 ♂.

All our specimens are young birds.

The Egyptian Kite was very common at Shendi, where a dozen or more might often be seen flying over our camp at the same time. In a clump of date-palms near Metemmeh we discovered a large number of nests, which already contained young birds on March 2nd. We afterwards found several others containing eggs in clutches of two and three on March 8th, 15th, and 21st. These are of the usual type of Kites' eggs, except that the ground-colour is pure white, and not pale blue, as it is in many specimens taken at Cairo. They vary considerably in size, from 53 by 41 mm. to 47 by 40·5 mm.

78. *CIRCUS MACRURUS* (S. G. Gm.).

56 ♂, 116 ♂, 399 ♀.

These three examples are all immature birds, just beginning to assume the adult plumage.

They were often seen flying backwards and forwards over the grassy plain above mentioned, more often in the evening than during the day-time. On one occasion we saw one of these birds chase a Crested Lark, but their food consists mostly of mice and other small mammals.

79. *CIRCUS PYGARGUS* (Linn.).

55 ♀.

Our single Montagu's Harrier was shot on February 20th, when it was hunting in company with an individual of the preceding species.

80. *MELIERAX GABAR* (Daud.).

172 ♀.

This Hawk was decidedly rare. Our specimen was sitting at the top of a high tree, chanting loudly.

81. \**GYPSES FULVUS* (J. F. Gm.).

Griffon Vultures were rarely seen.

82. \**GYPSES RUEPELLI* (Brehm).

Rüppell's Vulture was seen on one or two occasions.

83. \*VULTUR MONACHUS Linn.

The Black Vulture was more common than either of the two preceding species. It is a magnificent bird when on the wing.

84. \*NEOPHRON PERCNOPTERUS (Linn.).

The Egyptian Vulture was exceedingly common and almost offensively tame. A nest, containing one egg and one young bird, was found on a ledge of a cliff near the Pyramids of Meroe on March 22nd. The nest was composed of sticks with a solid foundation of hyena's dung; it was lined with an extraordinary collection of hair of goats, gazelles, and hares, wings of sand-grouse, and scraps of cloth and paper.

85. \*HELOTARSUS ECAUDATUS (Daud.).

A Bateleur Eagle seen near the Pyramids of Meroe on March 22nd was the only Eagle that we saw in the Sudan. It came quite close to us, but was immediately attacked and driven away by a pair of Peregrine Falcons, which had a nest with three young on the top of one of the Pyramids.

86. BUBULCUS LUCIDUS (Rafin.).

75 ♀.

Buff-backed Herons were occasionally seen on the cultivated parts of the river-bank, often standing upon the backs of cattle.

87. \*HERODIAS ALBA (Linn.).

A single Great White Heron was seen on Tuti Island, opposite Khartum, on March 26th.

88. \*NYCTICORAX GRISEUS (Linn.).

Night-Herons were rarely seen.

89. \*CICONIA NIGRA (Linn.).

Black Storks were occasionally seen.

90. \*CICONIA ALBA Bechst.

White Storks were often seen in immense flocks flying northwards.

91. \**PLATALEA LEUCORODIA* (Linn.).

Spoonbills were seen in one or two places south of Shendi.

92. \**ANASTOMUS LAMELLIGERUS* Temm.

These strange-looking birds were sometimes seen standing in solitary fashion on the river-bank, sometimes flying southwards in large flocks.

93. \**LEPTOPTILUS CRUMENIFER* (Cuv.).

The hideous Marabou was always to be seen if a horse or camel died in the neighbourhood. It is very expert in stealing choice pieces of carrion from the Egyptian Vultures.

94. *PHALACROCORAX AFRICANUS* (Gm.).

396 (sex?).

We did not see this little Cormorant at Shendi. Our specimen was obtained at Wad-Habushi, where the river is very swift and full of rocks.

95. \**PELECANUS ONOCROTALUS* Linn.

Pelicans were sometimes seen flying northwards in enormous numbers; they fly in a single line at a great height. On one occasion a flock of several hundreds of these birds settled on a sandbank opposite to Shendi; unfortunately our boat grounded before we could get within reach of them either with a gun or a camera. They soar to a very great height, apparently without a single flap of the wings.

96. *GELOCHELIDON ANGLICA* (Mont.).

196 ♀.

Gull-billed Terns were seen almost every day flying down the river singly or in small parties. They were sometimes seen hawking for insects over the bean-fields and dhurra-fields.

97. \**STERNA CASPIA* Pall.

Three or four pairs of this handsome Tern were seen flying about the ferry at Omdurman on March 26th; while a week or so before that date we saw it migrating northwards near Shendi.

98. \**RHYNCHOPS FLAVIROSTRIS* (Vieill.).

This remarkable-looking bird was first seen at Wad-Habushi on March 18th, and a few arrived at Shendi on their northward journey on March 23rd. During the day-time they sit on an isolated sandbank or on a rock in the middle of the river; in the early morning and evening they fly rapidly over the water with a very graceful skimming action. They are very wary, and we did not succeed in obtaining a specimen.

99. *CHENALOPEX ÆGYPTIACA* (Briss.).

395 ♂, 407 ♂, 408 ♀.

Egyptian Geese were very common all along the river, generally being seen in pairs. They make a great noise when they come out of the crops in the early morning.

100. \**DAFILA ACUTA* (Linn.).

Pintails were often seen in large flocks flying down the river.

101. \**NETTION CRECCA* (Linn.).

Three Teal were once seen.

102. *PTEROCLES SENEGALLUS* (Linn.).

213 ♂, 214 ♂, 215 ♀, 379 ♀.

This large Sand-Grouse was very rare at Shendi compared with the next species. It was never seen in company with *P. exustus*, and seemed to prefer thick bush rather than the more open desert. The natives distinguish between the two birds, and call this one "Gutta Dahowi."

103. *PTEROCLES EXUSTUS* Temm.

157 ♂, 216 ♂, 218 ♂, 261 ♂, 310 ♂, 156 ♀, 217 ♀, 262 ♀.

Our Shendi specimens may be regarded as being typical *Pterocles exustus*; they do not agree with the form found on the White Nile by Mr. Witherby, and called by Mr. Hartert *P. e. somalicus* (Nov. Zool. vii. p. 28); the latter is a much brighter, more sandy, and smaller bird.

This Sand-Grouse was found in extraordinary numbers. It flies down to certain spots on the river to drink with



perfect regularity every morning. Considering how thinly these birds are distributed over the country—they are seldom seen in flocks, except when going to drink—it seems likely that many of them must come from very remote parts of the desert.

We found eggs of this bird on the 6th, 17th, and 23rd of March. They are laid on the bare ground; beyond a very slight depression there is no attempt at making a nest. The full number seems to be three. The ground-colour is creamy buff, and is covered with sharply defined rich brown markings and underlying spots of a pale grey colour. An egg taken after death from a bird shot on February 28th is marked with more pale spots than are our other eggs. Measurements: 35·6 by 26·5, 36·2 by 26·6, 36 by 25, 39 by 25 mm.

The native name for this bird is "Gutta."

104. *COTURNIX COTURNIX* (Linn.).

The Quail was tolerably common at Shendi during our whole stay.

105. *EUPODOTIS ARABS* (Linn.).

The head and neck only of this bird were preserved. It was trapped in the desert by a native, who had adopted the usual trick of pulling out all the primaries. We often saw Bustards, presumably of this species, in the desert, but they always contrived to keep out of range; the chestnut axillaries are a good distinguishing character when the bird is flying.

106. *ÆDICNEMUS SENEGALENSIS* Swains.

386 ♂, 387 ♂.

Two of these birds were obtained at Wad-Habushi on March 18th. Their behaviour is very similar to that of the Norfolk Plover.

107. *HOPLOPTERUS SPINOSUS* (Linn.).

41 ♀, 380 ♀.

Spurwing Plovers were met with commonly all along the river-banks. They are extremely noisy during the night, and also during the day if their breeding-places are invaded.

A nest containing four eggs was found on March 18th. They resemble brownish eggs of *Vanellus vulgaris*, but are less pyriform and much smaller. The deep brown patches are all more or less longitudinal.

Measurements: 41·1 by 28·5, 40 by 27·5, 40 by 27·5, and 40 by 28·5 mm.

108. *PLUVIANUS ÆGYPTIUS* (Linn.).

12 ♂, 13 ♂, 97 ♀, 98 ♀, 257 ♀, 338 ♀, 360 ♀.

These pretty birds were fairly well distributed along the river-banks in small flocks. Towards the end of March they were evidently just on the point of breeding and occurred in pairs; the ovaries of the females were very much enlarged, and we often observed them scratching holes in the sand and then covering them up, as though they were burying their eggs. This habit is well known to the natives, who also are acquainted with the eggs, which they describe as being green. Curiously enough, they call this bird "Asfur el timsah," that is, "Bird of the Crocodile"; so there may be something in Herodotus's story of the Trochilus after all!

EXPLANATION OF PLATE I.

Fig. 1. *Cisticola aridula*, p. 16.

2. Egg of *Passer rufidorsalis*, p. 9.

3, 4. Eggs of *Caprimulgus eximius*, p. 20.

II.—*Notes upon the Osteology of Aramus scolopaceus*. By FRANK E. BEDDARD, M.A., F.R.S., Prosector and Vice-Secretary of the Zoological Society of London.

OPINIONS as to the exact systematic position of this curious bird have differed and still differ greatly. A list of the varying views that have been held at one time or another as to the relationships of *Aramus* is to be found in Fürbringer's 'Untersuchungen'\*. From this it will appear that the bulk of current opinion is in favour of keeping the bird in the place which is assigned to it in the last edition of the 'Vertebrate List,' where it is joined with the Cranes, Bustards, *Cariama*, *Rhinochetus*, *Psophia*, and *Eurypyga* to form Mr. Sclater's

\* 'Untersuchungen zur Morphologie und Systematik der Vögel,' &c. (Amsterdam, 1888), p. 1207.